UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 16, 2010

Mr. Abdelmoez Abdalla
Federal Highway Administration
705 North Plaza Street, Suite 220
Carson City, Nevada 89701

Subject: Final Environmental Impact Statement for the I-15 Corridor Improvements and Local Arterial Improvements (CEQ #20100211)

Dear Mr. Abdalla:

The Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act. Our detailed comments are enclosed.

EPA reviewed the Draft Environmental Impact Statement (DEIS), and provided comments to the Federal Highway Administration (FHWA) and Nevada Department of Transportation (NDOT) on November 6, 2009. We rated the DEIS as Environmental Concerns-Insufficient Information (EC-2) based on concerns about the project's impacts to environmental justice communities due to residential relocation and noise impacts, as well as concerns about air quality, and near-roadway health impacts to residents that will be in close proximity to the highway. We commend FHWA and NDOT for the commitments for additional noise barriers as well as interest in applying green design measures. However, we have remaining concerns about relocation-related impacts, environmental justice impacts, and air quality impacts of the project.

In light of the project's relocation impacts to an estimated 850 people in 345 households, EPA remains concerned about impacted residents. EPA continues to recommend that FHWA and NDOT outreach thoroughly to potential displacees and revisit the conclusion that no environmental justice impacts will occur as a result of the project. Interviews with displaced residents can provide a basis for meaningful mitigation measures. We also recommend consulting neighborhood groups on potential mitigation measures to reduce effects on displaced residents. We recommend including further commitments to mitigate environmental justice impacts in the Record of Decision (ROD).

EPA continues to believe the project may be a Project of Air Quality Concern, and we recommend consultation with the Regional Transportation Commission of Southern Nevada and EPA air quality staff regarding this issue prior to completing the ROD. We also continue to recommend that FHWA and NDOT commit to specific construction emissions mitigation

measures and provide, through the enclosed detailed comments, additional supporting information with our continuing recommendations that mobile source air toxics impacts be assessed and mitigated.

We appreciate the opportunity to review this Final EIS. When the ROD is signed, please send one copy to the address above (mail code: CED-2). If you have any questions, please contact me at 415-947-4161, or Chris Ganson of my staff at 415-947-4121 or ganson.chris@epa.gov.

Sincerely,

Connell Dunning, Transportation Team Leader
Environmental Review Office

Attachments: EPA's Detailed Comments
Green Highway Brochure

cc: Steve Cooke, Nevada Department of Transportation
Lewis Wallenmeyer, Clark County Air Quality Management District
Carl Rowe, Housing Authority of the City of Las Vegas

Displacement of Residents

EPA understands that the proposed project will impact and displace over 800 residents as proposed. EPA appreciates Federal Highway Administration (FHWA) and Nevada Department of Transportation's (NDOT) commitments to both 1) relocation assistance for owners, renters, and low-income residents to housing within their financial means and 2) interviews with all households in rental units. EPA also appreciates FHWA and NDOT's recognition of the potential impacts on community cohesion in the residences along Desert Lane. The Final Environmental Impact Statement (FEIS) includes a commitment that any cohesion concerns will be addressed and efforts will be made to minimize the impacts of relocation during FHWA and NDOT's meetings with impacted renters to discuss relocation benefits. EPA agrees that individual, one-on-one meetings are warranted given the great impact that residences will be subjected to.

While we understand the inability to identify specific locations to which displaced residents will be relocated, we encourage FHWA and NDOT to work both with local housing agencies and community groups to ensure relocation to decent, safe, and sanitary replacement housing occurs. This is particularly important, given that the alternatives being considered for the future expansion of I-515, directly to the east of this project, may also result in the disruption of hundreds of residences. We continue to recommend that NDOT go above and beyond the baseline Uniform Relocation Act requirements when relocating residents in light of cumulative displacements and impacts to cohesion that have, and will, in the future, be a direct result of NDOT and FHWA highway expansion.

EPA appreciates the additional information on project phasing and vacancy rates in the area, and the FHWA and NDOT commitment to continue to monitor changes in the local housing market during each phase of proposed construction to insure there is sufficient (and affordable) housing to accommodate those that will be relocated by the I-15 improvements.

Recommendations:

- We continue to recommend that FHWA and NDOT go above and beyond the baseline Uniform Relocation Act requirements when relocating residents. For example, we encourage you to work with the community to determine mitigation measures for displacement.

- We recommend that the Record of Decision (ROD) include a commitment to interview all potential displacees and to outreach to community groups, to address potential issues of community cohesion and develop meaningful mitigation measures.

Environmental Justice

As stated in our comments on the Draft EIS, Executive Order 12898 directs federal

agencies to make achieving environmental justice part of their missions by identifying and addressing, as appropriate, disproportionately high adverse human health or environmental effects of their activities on minority and low-income populations. The United States Department of Transportation defines three fundamental EJ principles for the Federal Highway Administration and the Federal Transit Administration as follows:

> "1) To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations. 2) To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process. 3) To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations." ("Overview of Transportation and Environmental Justice", U.S. DOT)

Data in the FEIS indicate that a number of neighborhoods that would be impacted by the project are home to disproportionately low-income and minority populations. The FEIS provides a conclusion that the proposed project will cause no environmental justice impacts, due to compensating benefits in the form of improved housing for displacees, specifically that differences in rent will be paid during a period lasting 42 months. The offering of compensating benefits appears to be one mitigating measure available to offset environmental justice impacts that will occur, based on information presented in the FEIS. Therefore, EPA believes that, FHWA and NDOT should revisit the conclusion that "no environmental justice impacts will occur". The ROD should clearly state that environmental justice impacts will occur and should identify compensating benefits as a mitigation measure to reduce impacts.

Recommendations:

- Revisit the conclusion that no environmental justice impacts will occur as a result of the proposed project. EPA recommends identifying compensating benefits as one measure of mitigation to reduce what appear to be environmental justice impacts as presented in the FEIS. The ROD should also identify additional mitigating measures.

- EPA recommends working with the affected community to define meaningful mitigation measures.

Air Quality

Air Quality Monitoring Data and Hot Spot Analyses

EPA appreciates the inclusion of the latest available Maximum Measured Pollutant Concentration data. However, we continue to question the analysis presented in the FEIS to arrive at the conclusion that this is not a Project of Air Quality Concern (POAQC). Air quality impacts from the project are proportional to (among other factors) the *number* of vehicles and *number* of diesel vehicles on the roadway, not the *percentage* of diesel vehicles among the total number of vehicles.

We note that the first criterion listed for POAQC status is "New or expanded highway projects that have a significant number of or significant increase in diesel vehicles." To inform this criteria, the FEIS states that the percentage of diesel vehicles will remain low. However, given that overall Average Annual Daily Traffic (AADT) will increase, it does not necessarily follow that the number of diesel vehicles will remain low. Page 3-69 of the FEIS states that "...AADT along most segments of the Project Neon corridor will exceed 200,000 vehicles per day." At those volumes, the reported 4 to 5 percent diesel vehicle share could exceed a threshold of 10,000 diesel vehicles per day. Also, importantly, the FEIS identifies the presence of sensitive receptors nearby the roadway (residences, daycare facilities, and a church). Therefore we continue to believe the project may qualify as a Project of Air Quality Concern.

Recommendation:

- Consult with the Regional Transportation Commission of Southern Nevada and EPA to make a final determination whether this is a Project of Air Quality Concern. Include documentation, and a summary of the ultimate conclusion following coordination with Regional Transportation Commission and EPA, in the ROD along with the results of any additional analyses that may be warranted.

Construction Impacts

We appreciate NDOT stating the intent to use existing industrial land uses east of I-15 for construction staging areas in order to locate them as far away from residential areas west of I-15 as possible. We recommend that this intention be included in the ROD.

EPA agrees with NDOT and FHWA statement that "Off-road diesel engines can contribute significantly to the levels of particulate matter and nitrogen oxides in the air." EPA commends FHWA and NDOT for listing in response to our comment strategies to reduce construction emissions, including reducing idle times, properly maintaining equipment, using clean fuels, and retrofitting diesel engines.

Recommendation:

- EPA recommends that FHWA and NDOT include the following additional construction mitigation measures (as presented in the Response to Comments) as well as others that will reduce air quality impacts, in the ROD:
  - Reducing idle times, properly maintaining equipment, using cleaner fuel, and retrofitting diesel engines with diesel emission control devices. By reducing unnecessary idling at the construction site, emissions will be reduced and fuel will be saved.
  - Proper maintenance of the diesel engine will also allow the engine to perform better and emit less pollution by burning fuel more efficiently.
  - Switching to fuels that contain lower levels of sulfur reduces particulate matter. Using ultra-low sulfur diesel does not require equipment changes or modification. Using fuels that contain a lower level of sulfur also tend to increase the effectiveness of retrofit technologies.

- Retrofitting off-road construction equipment with diesel emission control devices can reduce particulate matter, nitrogen oxides, carbon monoxide, or hydrocarbons, in addition to other air pollutants.
- Diesel particulate filters can be used to physically trap and oxidize particulate matter in the exhaust stream and diesel oxidation catalysts can be used to oxidize pollutants in the exhaust stream (U.S. EPA, 2008).

• We recommend that FHWA and NDOT include this suite of potential mitigation measures in the future specifications for the construction contract for these projects.

Mobile Source Air Toxics (MSAT)

EPA appreciates the following statement provided in the FEIS Response to Comments, "FHWA agrees that mobile source air toxics may potentially impact the project area." However, we disagree with the conclusion stated in the Response to Comments that, "FHWA does not feel that additional MSAT analysis would be beneficial for decision-making and is not warranted". Given the evidence supporting potential health impacts associated with near-roadway exposures, EPA continues to recommend that FHWA and NDOT assess potential effects and commit to measures to reduce health impacts and we provide the following responses to FHWA following our review of the Response to Comments in the FEIS.

EPA comments on the DEIS cited the recent National Cooperative Highway Research Program (NCHRP) report entitled "Analyzing, Documenting, and Communicating the Impacts of Mobile Source Air Toxic Emissions in the NEPA Process" (NCHRP 25-25 Task 18, March 2007). Although FHWA discounts the application of this report to the analysis of mobile source air toxics analyses, EPA continues to believe that the above-stated report provides a useful approach for informing the public and decision-makers about potential MSAT impacts through the NEPA process. The report reflects a wide scientific consensus on the types of analysis suitable for assessing air quality from roadway emission sources. EPA's Air Toxic Risk Assessment (ATRA) Reference Library (http://www.epa.gov/ttn/fera/risk_atra_main.html) provides parallel recommendations to the NCHRP report for modeling and risk assessment.

Epidemiological Studies Establish Support for Health Hazard

The Response to Comments states that epidemiological studies "suffer from the limitation that they cannot by their very nature establish causality. They may indicate statistical associations, but other confounding factors may be missed and may represent the true cause of the impact." We note that the presence of confounding factors does not invalidate epidemiologic investigation as a means of establishing the presence of a health hazard, nor its use in assessing population risks. Epidemiologists have developed numerous formal approaches for assessing causality using epidemiologic information and other factors. Most commonly, the Bradford Hill criteria (http://www.edwardtufte.com/tufte/hill) are regarded as a means of addressing evidence. These do not make up a "checklist," but a way to systematically evaluate evidence, including observational (epidemiologic) and biological (toxicological) information.

Attainment Status of Surrounding Airshed Not Likely to Confound Analyses

The Response to Comments states that FHWA has concerns about reaching conclusions

regarding health impacts from highway emissions based on proximity studies in areas known to exceed ambient air quality standards, such as the recent study by Dr. James Gauderman, et al., entitled "Effect of Exposure to Traffic on Lung development from 10 to 18 Years of Age: A Cohort Study". Epidemiologic studies of traffic-related health generally use people in the same urban area as a control group, all of whom are likely to live in the same airshed. As such, the possibility of confounding as a result of attainment status is minimal. There are numerous studies in attainment areas, including: Kim et al. (2004) Traffic-related air pollution near busy roads. The East Bay Children's Respiratory Health Study. American Journal of Respiratory and Critical Care Medicine 170: 520-526.

Sources Supporting Conclusions Regarding Dispersion Modeling and Mobile Source Air Pollution-Health Impacts Analyses

The Response to Comments states that "well-documented uncertainties are associated with dispersion modeling". Based on a review of the scientific literature, EPA believes that this claim is not supportable. We provide the following sources regarding dispersion modeling

- Venkatram, A.; Isakov, V.; Seila, R.; Baldauf, R. (2009) Modeling the impacts of traffic emissions on air toxics concentrations near roadways. Atmospheric Environment 43: 3191-3199.
- Tamura, T.M.; Hafner, H.R.; Brown, S.G.; Eisinger, D.S. (2005) Investigation of consistency between ambient monitoring data and MOBILE6.2 emissions predictions for air toxics. Sonoma Technology, Inc. Final Report STI-903632-2621-FR. Prepared for Federal Highway Administration, Office of Natural Environment. *The study concludes: "Analyses of ambient air data showed no consistent and substantial bias in the MOBILE6.2 model estimates for benzene and 1,3-butadiene."*
- Nadim, F.; Iranmahboob, J.; Holmén, B; Hoag, G.E.; Perkins, C.; Dahmani, A. (2003) Application of computer models to assess the effects of emission-reduction programs for a sustainable urban air quality management. Conference paper presented at Application of Technology in Urban Development, December 21-28, 2003. Iranian Academic Association.

The Response to Comments in the FEIS also states that the total body of literature needs to be consulted before conclusions can be made regarding analysis of health impacts associated with mobile sources. We note several systematic reviews of studies of traffic and health not included in the FEIS. These reviews should have been described accurately in the Response to Comments section of the FEIS, including the uncertainties associated with them:

- Zhou, Y.; Levy, J.I. (2007) Factors influencing the spatial extent of mobile source air pollution impacts: a meta-analysis. BMC Public Health 7: 89. doi:10.1186/1471-2458-7-89
- Salam, M.T.; Islam, T.; Gilliland, F.D. (2008) Recent evidence for adverse effects of residential proximity to traffic sources on asthma. Current Opin Pulm Med 14: 3-8.
- Raaschou-Nielsen, O.; Reynolds, P. (2006) Air pollution and childhood cancer: a review of the epidemiological literature. Int J Cancer 118: 2920-2929.
- HEI Panel on the Health Effects of Air Pollution. (2010) Traffic-related air pollution: a critical review of the literature on emissions, exposure, and health

effects. HEI Special Report 17 [Online at www.healtheffects.org]

In particular, we note that FHWA referenced a Health Effects Institute (HEI) report (Special Report 16 - Mobile-Source Air Toxics: A Critical Review of the Literature on Exposure and Health Effects) that concluded that exposure to many MSATs comes from sources other than vehicles, and that mobile sources are the primary sources of exposure for only a few of the 21 MSATs listed by the USEPA in its 2001 Rule. We note, however, the recent HEI update to that report, published in January, 2010 (Special Report 17 - Mobile-Source Air Toxics: A Critical Review of the Literature on Exposure and Health Effects). HEI Special Report 17, which was partly funded by FHWA should have been discussed in particular, given its extensive review of epidemiologic, exposure, and toxicological literature. The report concludes that there is sufficient evidence to infer a causal association between exposure to traffic-related air pollution and exacerbation of respiratory symptoms in asthmatic children, between "sufficient" and "suggestive" evidence for new onset childhood asthma and pediatric asthma prevalence, and suggestive evidence for associations with all-cause mortality, cardiovascular illness, and exacerbation of respiratory symptoms in adults with asthma.

Future emissions analysis

Regarding the statement that project area emissions will be lower in the future regardless of which alternative is chosen and that MSAT impacts will also be reduced, EPA points FHWA and NDOT to a 2006 study sponsored by the Southern Nevada Regional Planning Coalition (SNRPC) using the Land use, transportation, and air quality (LUTAQ) model (SNRPC, 2006: Online at *http://www.snrpc.org/Reports/LUTAQFinalReport052506.pdf*; For future reference, EPA recommends that FHWA and NDOT reconcile its results with those of the LUTAQ study, particularly given the presence of air pollutants which do not track with carbon monoxide, such as nitrogen oxide (e.g. NO2) and components of dust particles.

The study notes that:

- "Maintaining the status quo will mean significant increases in traffic congestion and air pollution."
- "Reductions in "Distance per Trip" and the "Number of Trips" are required for any significant improvement."
- "We need to increase our use of mass transit and alternative modes of transportation."
- "A combination of densification, mixed use and transit charges will:
    - Keep time in traffic from increasing beyond present levels
    - Keep air pollution consistently within (below) EPA standards.
    - Avoid a decrease in the rate of population growth.
    - Reduce overall costs below the status quo scenario by avoiding the loss of federal transportation subsidies."

We appreciate the multiple goals of the project, including improved safety and decreased congestion (as stated in the Response to Comments); however, we continue to recommend implementing the best available science in determining potential near-roadway health impacts associated with MSATs and incorporating focused mitigation measures into the ROD. We provide this recommendation due to the sufficient evidence that supports a causal relationship

between traffic-related air pollution and exacerbation of asthma, as well as the context and location of this specific project, which is directly adjacent to a portion of the Las Vegas Highway system that was the subject of the Sierra Club vs. Mineta decision. The settlement of that decision requires FHWA and NDOT to install air pollution monitoring and filtration systems at schools adjacent to the roadway, relocate portable school buildings and playgrounds, and help redesign a nearby high school to minimize exposures, and also retrofit diesel school buses to reduce emissions. EPA believes that similar mitigating actions are applicable to this expansion of the Las Vegas highway system.

Recommendation:

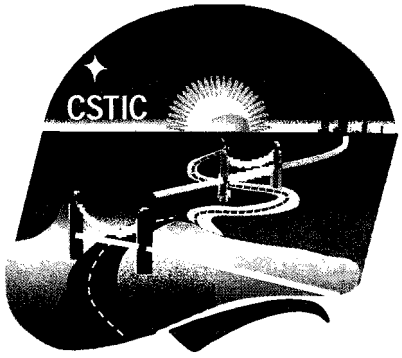
- Given the evidence supporting potential health impacts associated with near-roadway exposures, EPA continues to recommend that FHWA and NDOT assess potential effects and commit to measures to reduce health impacts.

- Include in the ROD commitments for mitigating potential health impacts from the proposed highway expansion. Suggested mitigation measures include those identified in the settlement agreement for Sierra Club vs. Mineta: installing air pollution monitoring and filtration systems at schools and other sensitive receptor sites adjacent to the roadway; relocating portable school buildings and playgrounds; and helping redesign a nearby high school to minimize exposures.

- For future highway expansions proposed in the vicinity (high-traffic volume, high density population) of Las Vegas, we recommend that FHWA and NDOT assess potential health impacts and implement measures to reduce impacts. We appreciate the FHWA commitment to continue to monitor the state of the science and update the interim guidance and we continue to be available to further advance analyses through interagency coordination on this critical issue.

Green Design and Construction

EPA appreciates FHWA and NDOT's interest in using recyclable materials and applying the green design measures listed in the FEIS, and recognizes the need to maintain flexibility in choosing building materials as the project advances and best management practices evolve. Per your interest in green highways, we recommend contacting Jeff Dhont, EPA Region 9 (415-972-3020 or dhont.jeff@epa.gov) regarding information about reuse of industrial materials and other measures to incorporate into the project in order to reduce the environmental impacts of the project.



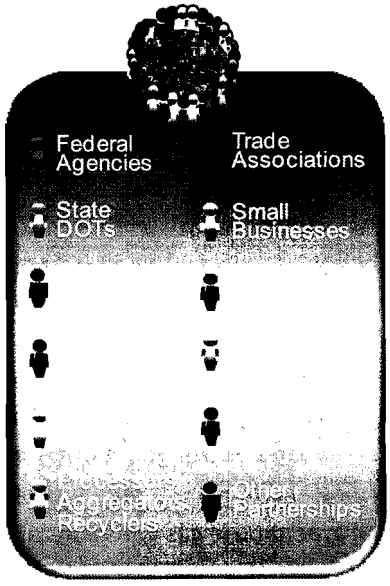
An Initiative by EPA Region IX:
Collaborative for Sustainable Transportation and Infrastructure Construction

October 14, 2009 EPA Region IX Pacific Southwest

The U.S. Environmental Protection Agency's Region 9 (CA, AZ, NV, HI, Pacific Islands) is initiating a program to make how we build transportation and civil infrastructure more sustainable. This includes highways, streets, bridges, stabilizing structures, sewer and water conveyances and treatment systems, transit systems, drainages, dams, levees, ports, etc.

We are exploring the initiation of an action-based *Collaborative for Sustainable Transportation and Infrastructure Construction (CSTIC)* . Also, either within or outside the Collaborative, we are seeking from stakeholders ideas and opportunities in which EPA can support projects that advance sustainability of this infrastructure.

While making our infrastructure more sustainable touches on many areas of sustainability (see bar below), our initial focus will be on ***the recycling and reuse of materials.*** The effort can be expanded as appropriate.

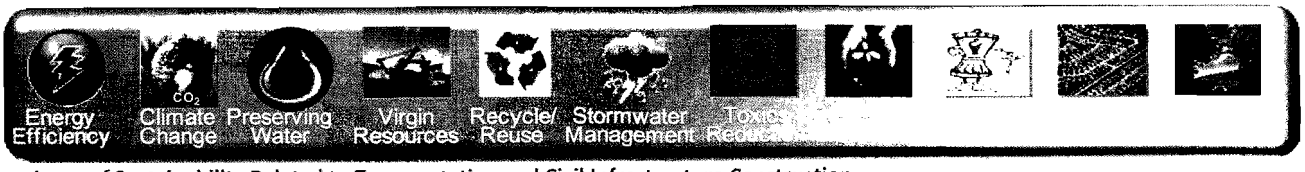


Collaborative for Sustainable Transportation & Infrastructure Construction

We recognize that the most meaningful results can often be realized when participants understand their interrelationships, pool resources and collaborate on creative ideas and solutions.

EPA Region 9 proposes to assemble a group of collaborators, and create an environment both to share information and to develop creative actions and work products to bring about sustainability in transportation and infrastructure construction. We intend that the group have its own identity and ownership of its products.

Both through the collaborative and in independent partnerships, our proposed goals and potential outputs are shown above. Rather than be solely EPA-driven, we would like participants to play a key role in defining the

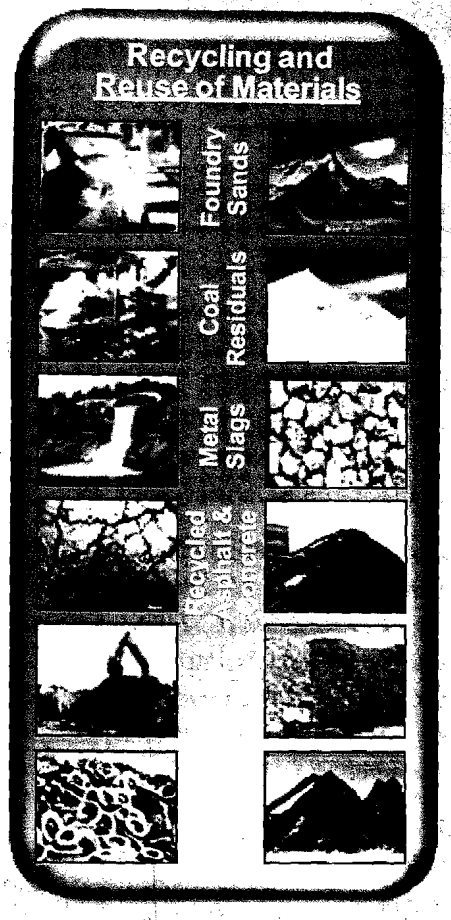


Areas of Sustainability Related to Transportation and Civil Infrastructure Construction

goals, objectives and outputs. We encourage you to participate in the CSTIC and have ownership in products that advance infrastructure sustainability.

Also, if you have potential or existing projects where EPA involvement could significantly support or advance infrastructure sustainability, we want to hear from you. We are interested in successful pilots and best practices.

EPA is developing a network of interested participants. We are learning as much as we can about existing programs, markets, and organizations. We are soliciting input from each participant on what matters most to them, what they see as the major barriers to sustainability of infrastructure, creative ideas, opportunities for progress, demonstration projects, and what EPA can best do to facilitate results.



Area of Initial Focus

High-volume industrial byproducts, construction and demolition debris, and scrap tires are produced by the hundreds of millions of tons each year and are often landfilled. Such materials have many beneficial uses, especially in construction of roadways and civil infrastructure. Pavements and structures made with these materials can be stronger, more durable, and less costly. Recycling and reuse can save substantial energy, resources, water, greenhouse gas emissions and environmental impacts embodied in these materials for meeting new societal needs.

For More Information

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